

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	cloud\$3 same shadow\$3 same detection\$3 and data\$3 same point\$3 same image\$4 and infrared\$3	US-PGPUB; USPAT	OR	ON	2005/06/20 13:24
S1	50	("5739919" "5796716" "5828468" "5839089" "6011625" "6023470" "6178453" "6246468" "4149756" "4310011" "4484192" "4601303" "4965014" "5206806" "5294782" "5386106" "5406481" "5471541" "5489773" "5592402" "5602755" "5659493" "5699269" "5708503" "5848115" "5861891" "5920495" "5988862" "6034697" "6037896" "6051028" "6125327" "6137531" "6240511" "6330523" "6374198" "6388258" "6407735" "6420698" "6473079" "6512518" "6512993" "6608913" "6618689" "6619406" "6633290" "6701006" "6734849" "6738727" "6752008").pn.	US-PGPUB; USPAT	OR	ON	2005/06/20 13:22
S2	50	("5739919" "5796716" "5828468" "5839089" "6011625" "6023470" "6178453" "6246468" "4149756" "4310011" "4484192" "4601303" "4965014" "5206806" "5294782" "5386106" "5406481" "5471541" "5489773" "5592402" "5602755" "5659493" "5699269" "5708503" "5848115" "5861891" "5920495" "5988862" "6034697" "6037896" "6051028" "6125327" "6137531" "6240511" "6330523" "6374198" "6388258" "6407735" "6420698" "6473079" "6512518" "6512993" "6608913" "6618689" "6619406" "6633290" "6701006" "6734849" "6738727" "6752008").pn. and cloud	US-PGPUB; USPAT	OR	ON	2005/06/15 16:40

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S5	4	("5739919" "5796716" "5828468" "5839089" "6011625" "6023470" "6178453" "6246468" "4149756" "4310011" "4484192" "4601303" "4965014" "5206806" "5294782" "5386106" "5406481" "5471541" "5489773" "5592402" "5602755" "5659493" "5699269" "5708503" "5848115" "5861891" "5920495" "5988862" "6034697" "6037896" "6051028" "6125327" "6137531" "6240511" "6330523" "6374198" "6388258" "6407735" "6420698" "6473079" "6512518" "6512993" "6608913" "6618689" "6619406" "6633290" "6701006" "6734849" "6738727" "6752008").pn. and point same cloud and data same point and infrared	US-PGPUB; USPAT	OR	ON	2005/06/15 16:45

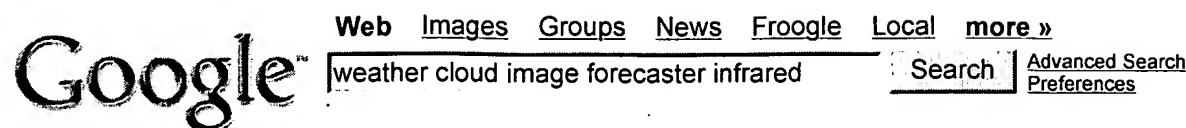
S6	11	cirrus and point same cloud and data same point and infrared	US-PGPUB; USPAT	OR	ON	2005/06/15 16:49
S7	3	vnir-swir and cirrus and point same cloud and data same point and infrared	US-PGPUB; USPAT	OR	ON	2005/06/15 17:49
S8	3	vnir-swir and cirrus and point and cloud and data same point and infrared	US-PGPUB; USPAT	OR	ON	2005/06/15 17:00
S9	3	vnir-swir and cirrus and point and cloud and data and point and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 13:41
S10	3	vnir-swir and cirrus and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:50
S11	1	cloud and spectral same image\$4 and aviris and modis and cirrus and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:38
S12	3	vnir adj swir and cirrus and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:39
S13	0	aviris and vnir adj swir and cirrus and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:39
S14	1	aviris and cirrus and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:40
S15	1	aviris and cirrus and infrared and point	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:49

S16	1	aviris and cirrus and infrared and point and cloud	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:41
S17	1	aviris and cirrus and infrared and point and cloud and visible	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:44
S18	1	aviris and cirrus and infrared and point and cloud and visible and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:48
S20	1	aviris and cirrus and infrared and point and cloud and visible and infrared and data	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:48
S22	1	aviris and cirrus and infrared and point and cloud and visible and infrared and data and comparison	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:46
S23	5	("5884226").URPN.	USPAT	OR	ON	2005/06/15 17:47
S24	3	(boright same arthur).in.	US-PGPUB; USPAT	OR	ON	2005/06/15 17:50
S25	3	vnir-swir and cloud and shadow and detection	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/15 17:51
S26	4	vnir-swir and cloud	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:47
S27	1	"I1" same norm\$5 and "I2" same norm\$5 and prestack and seismic and data	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:52

S28	1	"I1" same norm\$7 and "I2" same norm\$7 and prestack and seismic and data	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:52
S29	0	norm\$7 same (avo or rms) and hyperbolic same window and prestack and seismic and data and (huber or ekblom) same model	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:54
S30	0	norm\$7 and (avo or rms) and hyperbolic same window and prestack and seismic and data and (huber or ekblom) same model	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:54
S31	0	norm\$7 and (avo or rms) and hyperbolic and window and prestack and seismic and data and (huber or ekblom) same model	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 12:54
S32	2	norm\$7 and (avo or rms) and hyperbolic and window and prestack and seismic and data and (huber or ekblom) and model	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 13:04
S33	2	norm\$7 and (avo or rms) and hyperbolic and window and prestack and seismic and data and (huber or ekblom) and model\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 13:04
S34	1	("5563949").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/06/16 13:04
S35	5	("3638178"   "3931609"   "4403312"   "4799201"   "4892807").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/06/16 13:05
S36	3	vnir-swir and cirrus and point and cloud and data and point and infrared	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/16 13:41

	U	1	Document ID	Issue Date	Pages
1	X	X	US 20050114027 A1	20050526	41
2	X		US 20050013486 A1	20050120	61
3	X		US 20050012035 A1	20050120	30
4	X		US 20030142853 A1	20030731	15

	<b>Title</b>	<b>Current OR</b>	<b>Current XRef</b>
<b>1</b>	Cloud shadow detection: VNIR-SWIR	702/3	
<b>2</b>	Method and apparatus for automatic object identification	382/181	
<b>3</b>	System and method for significant dust detection and enhancement of dust images over land and ocean	250/226	
<b>4</b>	Security identification system	382/118	348/143

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 generally show low **clouds**, fog and snowcover better than **infrared images** and ...  
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**National Weather Service - NWS Portland**

**Infrared** satellite imagery allows the **forecaster** to see the **clouds** when ...  
 4 km **Infrared Image** (20 Aug 2004), satellite **image** 28 km **Infrared** (20 Aug 2004) ...  
[www.wrh.noaa.gov/pqr/tour/tour41.php](http://www.wrh.noaa.gov/pqr/tour/tour41.php) - 26k - [Cached](#) - [Similar pages](#)

**Radar/Satellite Links**

--Below is the latest "real time" National **Weather** Service radar **image** out of ...  
 ... This is an **infrared image** enhanced to highlight the **cloud** areas and the ...  
[www.leesweather.com/radar\\_satellite\\_links.htm](http://www.leesweather.com/radar_satellite_links.htm) - 27k - [Cached](#) - [Similar pages](#)

**Navy Forecaster's Guidance**

Comparing **infrared**, visible and water vapor **images**. Visible **Images**. Visible satellite **images** provide information about the observed **cloud** cover. ...  
[www.nrlmry.navy.mil/~kuciausk/esis/body/sat\\_apps/sat\\_apps\\_basic\\_body.html](http://www.nrlmry.navy.mil/~kuciausk/esis/body/sat_apps/sat_apps_basic_body.html) - 15k - Jun 19, 2005 - [Cached](#) - [Similar pages](#)

**Navy Forecaster's Guidance**

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[www.nrlmry.navy.mil/~kuciausk/esis/body/weather\\_satellites/weather\\_satellites\\_geo\\_body.html](http://www.nrlmry.navy.mil/~kuciausk/esis/body/weather_satellites/weather_satellites_geo_body.html) - 66k - Jun 19, 2005 - [Cached](#) - [Similar pages](#)  
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**Met Office: Satellite imagery**

The **infrared** pictures allow us to measure the temperature of the **cloud** tops, ...  
 The **Infrared images** should be updated with the 00:00, 06:00, ...  
[www.metoffice.com/satpics/samerica\\_IR.html](http://www.metoffice.com/satpics/samerica_IR.html) - 14k - Jun 19, 2005 - [Cached](#) - [Similar pages](#)

**SSEC In the News - January 2004**

According to Milwaukee's National **Weather** Service office, the clay-based dust ...  
 ... **Forecaster** Rusty Kapela referred people to the MODIS **image** on Liam ...  
[www.ssec.wisc.edu/media/January2004.htm](http://www.ssec.wisc.edu/media/January2004.htm) - 29k - [Cached](#) - [Similar pages](#)

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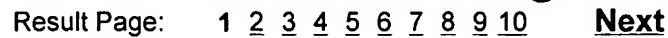
File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 The aviation **forecaster** uses the visible or **infrared image** as a back-ground on a ...  
 ... **forecaster** to choose the model, which handles the current **weather** ...  
[www.eumetsat.int/en/area2/proceedings/eump30/pdf/presentations/Moselthopap.pdf](http://www.eumetsat.int/en/area2/proceedings/eump30/pdf/presentations/Moselthopap.pdf) - [Similar pages](#)

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**infrared** radiation than low **clouds**. **Infrared images** are therefore useful in ...



The satellite **image** above is a classic example of a 10.7 micron **infrared** satellite ... to display the constantly moving dynamic **cloud** and **weather** patterns. ... [www.avalanche.ca/default.aspx?DN=13,10,3,Documents](http://www.avalanche.ca/default.aspx?DN=13,10,3,Documents) - 31k - [Cached](#) - [Similar pages](#)



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# National Weather Service Forecast Office

## Portland, OR



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## Satellite Imagery: Infrared

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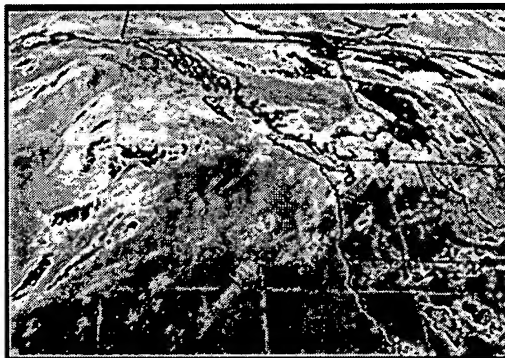
Other Satellite Imagery: [visible](#) | [infrared](#) | [water vapor](#) | [fog imager](#)

Infrared satellite imagery allows the forecaster to see the clouds when the sun goes down for the day. Essentially, the satellite is sensing heat. Different shades, called enhancements, are assigned to the various temperature ranges. Some computers create enhanced images, which displays colors for certain temperature ranges. This allows to the forecaster to quickly see where the clouds are getting colder, which are areas of precipitation. The taller or higher the clouds, the colder they become, hence the coldest clouds are often high up in the atmosphere.

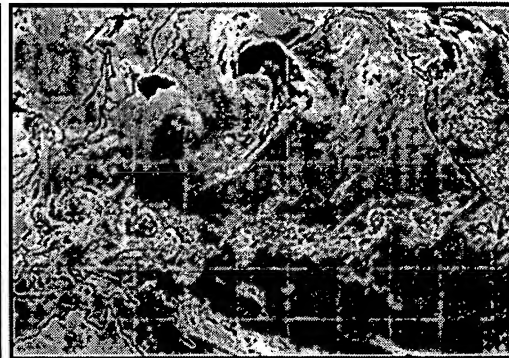
On the opposite side of the spectrum, the lower the clouds are to the ground, the more dark they appear. Since the ground heats up the most, the darkest areas will be the areas of no clouds where the ground can heat rapidly.

Notice on the image above that the warmest area is southern Rocky Mountains and the desert Southwest of the US while the colder air is over the Pacific, and over northern Canada. Does this make sense?

Often the images are referenced by a resolution, such as 1 km (kilometer) or 4 km. This resolution refers to the smallest size an object must be resolved on the imagers. Thus, a 1-km image will have more detail than a 4 km, and much more than a 8-km. On the other hand, the 1-km will have a smaller area of viewing, but the 8-km will have a much larger viewing area.



4 km Infrared Image (20 Aug 2004)



28 km Infrared (20 Aug 2004)

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*page last updated: October 14, 2004*